

able to carry said part from an inoperative safety position to a firing position where it is in operative relation to the trigger.

9. A torpedo exploder having a hammer, a trigger for restraining the hammer, a safety device, and means for operating the trigger comprising a slide carried by the safety device, the latter being oscillatable to move said slide laterally from an inoperative safety position to a firing position in engagement with the trigger.

10. A torpedo exploder having a safety device consisting of an oscillatable sleeve, a spring tending to turn it, a latch holding it in the safety position, stops for limiting its movement, and means for withdrawing said latch.

11. A torpedo exploder having a safety device consisting of an oscillatable sleeve, a slide carried by said sleeve, and means for oscillating said sleeve to displace the slide from an inoperative to an operative position.

12. A torpedo exploder comprising a tubular body, a central plug, a hammer within said plug, and a safety device consisting of a sleeve between the body and plug, rotatable from a safety to a firing position.

13. A torpedo exploder comprising a tubular body, a safety device consisting of a sleeve oscillatable therein, a non-rotative plug supported within said sleeve, and means for turning said sleeve from a safety to a firing position.

14. A torpedo exploder having a safety device, a latch for restraining it, and a propeller and screw adapted to release said latch after a predetermined movement.

15. A torpedo exploder having a safety device, an oscillatable latch, and a propeller having a screw-spindle engaging said latch to oscillate it.

16. A torpedo exploder having a safety device comprising a spring-pressed part, a latch for restraining it, a propeller, and a connection between said propeller and the latch for displacing the latter.

17. A torpedo exploder having a safety device, an oscillatable latch formed as a toothed segment, and a propeller having a screw-spindle and peripheral grooves, engaging said segment teeth to turn the latch.

18. A torpedo exploder having a trip device comprising a portion located externally on the lateral bow of the torpedo abaft the prow so as to receive and be displaced by a

glancing blow, and exploding means operated by its displacement to explode the charge.

19. A torpedo exploder having a central portion at its prow adapted to be displaced by a direct blow, and an eccentric portion distinct from said central portion and located abaft the prow, adapted to be displaced by a glancing blow, and exploding means operated by the displacement of either to explode the charge.

20. A torpedo exploder having a central projection at its prow adapted to be displaced by a direct blow, and eccentric projections distinct from said central projection, located abaft the prow and above and laterally of the central projection, and each adapted to be displaced by a glancing blow, and exploding means operated by such displacement of either projection to explode the charge.

21. A torpedo exploder having eccentric projections located respectively above and laterally of the central axis, and abaft the prow, movable independently of each other, and each adapted to be displaced by a glancing blow, and exploding means operated by such displacement of either projection to explode the charge.

22. A torpedo exploder having a trip lever with an arm thereof projecting eccentrically in position to be displaced by a glancing blow and exploding means operated thereby to explode the charge.

23. A torpedo exploder having a trip lever pivoted to the torpedo with an arm thereof projecting in position to be displaced by impact of the torpedo against an obstacle, and exploding means operated thereby when so displaced to explode the charge.

24. A torpedo exploder having a trip lever, a movable ring engaged thereby, a trigger, and a connection between said ring and trigger, whereby the displacement of said lever operates the trigger.

25. A torpedo exploder having a plurality of trip levers, a movable ring engaged by each of them, and means for exploding the charge operated from said ring.

In witness whereof, I have hereunto signed my name in the presence of two subscribing witnesses.

FRANK M. LEAVITT.

Witnesses:

CHARLES EDWIN POLLARD,  
WILLIAM RILEY.